



Analysis of a Brenzcatechol Additive in Styrene using HPLC

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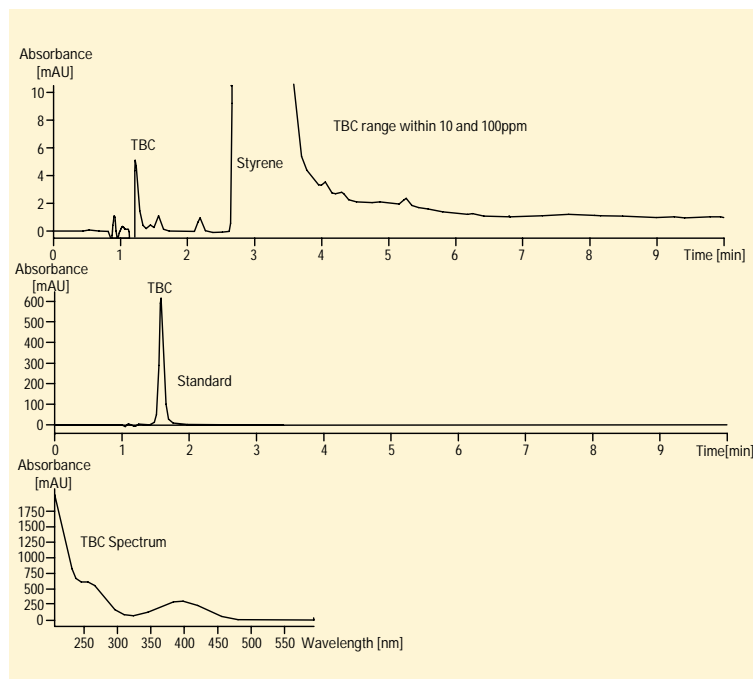
Polymer/
chemical industry

Abstract

Brenzcatechol (TBC) or Benzene-1,2-diol is used as an antioxidant for polymers. The concentration range of Brenzcatechol used varies between 10 and 100 ppm.

Method Performance

Figure 1 shows the HPLC chromatogram of the analyzed styrene sample and the standard chromatogram of Brenzcatechol. For additional identification purposes, spectra can be taken and a comparison with the standard spectrum can be made. For this application, 2.1 mm columns were used in order to improve sensitivity so that the detection of 1 ng with signal to noise of 2, could be achieved.



Conditions

Column

200 x 2.1 mm Hypersil ODS, 5 μ m

Mobile Phase

A = Water, B = Acetonitrile

Gradient

at start 50 % B, at 10 min 99.9 %B,
at 20 min 50 %B

Post Time 6 min

Flow Rate 0.5 ml/min

Oven Temp 40 $^{\circ}$ C

Injection Vol 1 μ l

Diode array detector

280/30 nm; Reference 500/50 nm

Sample preparation

1 ml styrene sample was diluted with
1 ml Tetrahydrofurane (THF)

Figure 1
Analysis of brenzcatechine (TBC) additive in styrene



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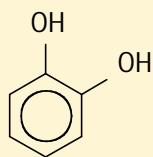


Figure 2
Brenzcatechin (Benzene-1,2-diol)

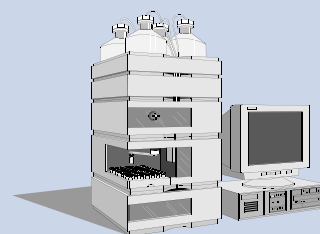
Method performance

LOD: 1 ng or 1 ppm with
signal/noise = 2
red RT <0.2 %
rsd area <2 %

Equipment

Agilent 1100 Series

- degasser
 - binary pump
 - autosampler
 - thermostatted column compartment
 - diode array detector
- Agilent ChemStation + software



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